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PHYSICAL EXAMINATIONS FOR  
RURAL FINANCIAL MARKETS IN  
LOW INCOME COUNTRIES

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Kurt Vonnegut, in his book titled Slapstick, weaves a tale around shadowy characters who can selectively increase the force of gravity, and cause large groups of individuals to feel sluggish. After looking at a number of rural credit activities in low income countries (LICs) the past dozen years, I am tempted to conclude that someone like Vonnegut's mischievous characters are applying their knowledge to these activities; most agricultural credit programs exhibit symptoms of excess "gs" pulling on their vital organs. In very few cases are these rural financial markets (RFMs) doing an adequate job of meeting equity and efficiency objectives, and far too many agricultural credit agencies are "black holes" into which large amounts of money, managerial time, and talent disappear.<sup>1/</sup> These results are especially disappointing given the emphasis by governments and donor agencies on expanding the quantity and quality of farm credit services the three decades; donor agencies have granted or lent in excess of 15 billion U.S. dollars over this period for agricultural credit. It is even more disappointing that

<sup>1/</sup> For more detail on these problems see Adams and others editors, Von Pischke and others editors, and Gordon Donald.

most policy makers are resigned to mediocre rural credit programs.

Until recently, difficulties in each agricultural credit program were thought to be unique. Diversity in the agencies providing loans helped reinforce this impression. Problems were typically individualized and blame was assigned to diverse reasons such as incompetent managers and staffs, or to corrupt and inefficient governments. Management replacement, reorganizing and renaming of the credit agency, nationalizing the lenders, shifting credit programs from troubled agencies to new ones, and additional regulations and controls have been some of the traditional treatments for these problems. Despite these prescriptions, serious loan recovery problems persist, the reluctance of loan officers to lend to farmers and to the rural poor prevails, political considerations continue to strongly influence agricultural lending procedures, and many of the lending agencies flounder because their costs of lending exceed revenues. It is clear to me, at least, that these traditional treatments for ills in rural financial markets are not attacking the roots of the problems. The similarity of these difficulties across lenders and countries also lead me to think that a few common, not unique, causes may be responsible for these chronic difficulties, and that uniform treatments might be appropriate.

In my opinion there are several reasons for the ineffective treatments of RFM ills: First, a good deal of confusion

exists about the operations of these markets. The diffused nature of RFMs makes it difficult to easily understand their operations, and traditional assumptions and policies are widely applied but little tested. Far too many important policy decisions about RFMs are based on stereotypes, horror stories, and dogmas. Also, too many people think of a loan as a productive input, rather than as a general claim on any good or service in the market. In addition, too few people view financial intermediaries as independent decision makers who produce diverse financial services that can easily adjust to meet changing conditions. Policy makers have incorrectly viewed financial markets as a thin veil, or as a set of irrigation channels whose headgates were manned by robots. Because rural financial intermediation is geographically dispersed and involves a very large number of participants, and because financial instruments are highly fungible and divisible, the feeling of control over these markets that many policy makers have is illusory.

Defective and incomplete problem diagnosis is a second reason for the persistent difficulties found in RFMs, and is the main focus of this essay. Too much of this analysis is similar to old medical prognoses that blamed fevers on bad night air, and other ills on the patient having humors that were out of balance. Because of faulty physical examinations, early shamans and physicians were unable to isolate causes of major illnesses. In some cases the treatments, such as the bleeding of patients, became part of the problem.

I am convinced that something similar is taking place in many RFMs. Treatments are applied without an adequate examination of the patients and some "remedies" create ills more serious than the problems they aim at curing.

My principal objective in this paper is to outline a diagnostic procedure that might better allow investigators to identify the sources of problems plaguing RFMs. Because some of the causes are incorrect policies, I also discuss how the diagnostic process can be used to encourage policy changes. I will conclude that a number of factors contribute to the poor performance of RFMs, and that this forces "doctors of finance" to do extensive diagnoses.

#### A Digression on the United States

There are substantial differences in the concerns of those who work on agricultural credit problems in the United States, and those who worry about problems of rural finance in LICs. U.S. researchers have concentrated on the role of credit in farmers' management of risk and firm growth along with some work on lender performance (Brake and Melichar). Much of this research is aimed at helping farmers to better manage their operations and also to help lenders do a better job of serving farmers. Those who work on problems in LICs have also wrestled with farm level credit use questions, but

have usually tried to estimate credit impact or credit demand (e.g. David and Meyer). In large part this research is directed at providing information for policy makers rather than for RFM participants. In recent years, researchers on LIC problems have also looked at the overall performance of RFMs, how various policies affect this performance, and how financial markets participate in mobilizing voluntary savings. None of these three issues has received much attention in U.S. research.

These differences in research are strongly influenced by pressing RFM problems in most LICs, and the general lack of difficulties in these markets in the U.S. Several unique features in the U.S. also influence agricultural credit research. These include a weak central bank, secure land titles, a reasonably efficient judicial system, and political stability. This is reinforced by a generally prosperous agricultural sector that makes many farmers creditworthy. Government investments in farming, price supports, and highly productive resources in agriculture contribute to this prosperity.

RFMs in the U.S. are also somewhat unique in the way they obtain funds for lending. Commercial banks rely heavily on rural deposits, while the cooperative credit system draws money from bond markets. Even with the Farmers Home Administration, the Commodity Credit Corporation and several other credit programs, the U.S. government currently

plays a limited role in the operations of U.S. RFMs. Most of the agricultural credit allocation decisions result from market forces and satisfactory performance is taken for granted. Few of these features are found in most LICs, and governments and donors typically feel that RFMs must be forced to lend more to farmers. This, combined with emphasis on central planning, causes research in LICs to place much more stress on national policy issues than is true in the U.S.

#### Preliminaries to Diagnosis

Before doing RFM diagnosis it is useful to clarify four issues. The first is to understand what financial markets do. The second is to identify the relevant decision-making units involved in rural financial intermediation. The third is to recognize the strengths and weaknesses of RFM data. And, the fourth is to outline the steps that must be included in a physical examination of a particular RFM.

#### What Financial Markets Do

Until recently, Keynesian and development economics gave relatively little attention to financial intermediation. Work by Goldsmith, Gurley, Shaw, and Patrick



during the 1960s and early 1970s helped to clarify the important support that finance gives to economic development. As Long has pointed out, finance makes four contributions to a commercial economy: it provides efficient mediums of exchange, it encourages more efficient resource reallocation through transferring claims on resources from surplus to deficit units, it provides for the transformation and redistribution of risk among units, and finance can be used as an important tool in economic stabilization activities (in Von Pischke and others, editors).

The operations of financial markets can also strongly influence income and asset ownership distributions and can affect multipurpose organizations that provide rural financial services.<sup>2/</sup> Many agricultural cooperatives have been weakened by their agricultural credit activities. Also, in many cases, there is a very close relationship between the political system and financial markets. In some cases financial markets, especially those in rural areas, may be important vehicles for allocating political patronage (see Kane, Ladman and Tinnermeier, and Robert for further details).<sup>3/</sup>

<sup>2/</sup> Several essays by Adams, Adams and Tommy, Gonzalez-Vega, and Vogel in Adams and others, eds., provide details on how financial markets affect income distributions.

<sup>3/</sup> In Adams and others, eds., and in Von Pischke and others, eds.

### Decision Making Units

By nature, financial markets involve many decision-making units whose behavior must be understood for diagnostic purposes. These units include the farm-household savers and borrowers, the non-farm rural firms that borrow and save, formal and informal financial intermediaries, the central bank, the political system and/or the government, and the donor agencies. In addition to understanding the behavior of these units, the diagnosticians must also consider the collective behavior of all of these units, and not be mesmerized by the activities in only a single credit project or institution. For example, a donor funded project may stress making additional long term loans to farmers and be successful in doing so through one segment of the financial market. At the same time, other parts of the rural financial system may reduce the number of long term loans by a greater amount. The net result of this would be a decrease in the amount of money available through RFMs for long term loans. A holistic approach is needed to document the performance of these markets.

### Data Limitations

Financial markets are largely information gathering systems. The information that moves through the formal

system is usually loan specific. The formal lender gathers data to establish the creditworthiness of potential borrowers and to keep track of loan repayment. (Informal lenders do much the same thing through intimate knowledge of their clients.) This includes information on the loan size, justification given for the loan, some loan terms, and the source of funds used to make the loan. Well managed credit agencies also have information on the repayment status of loans. This generally does not include readily available details on loans that have been refinanced, or information on the length of time loans are overdue. In those cases where external donor agencies are involved, it is common for a good deal of information to be gathered for periodic reports to donors on the progress made in disbursing and collecting "the funds" provided by donors. In few cases are these reports of value to credit managers.

It is dangerous to make firm conclusions about the characteristics of borrowers and savers based on aggregate information published by most credit agencies or central banks. One has to be especially careful not to draw erroneous conclusions about the number of low income borrowers serviced by using the number of small loans made, for example. People who are well-off may borrow small amounts, and they may also have multiple small-to-medium loans, sometimes from several agencies. One must also be careful in drawing conclusions about the impact of loans based on the

reasons given to justify loans. These justifications and loan use may, or may not, be closely associated with the marginal changes in liquidity use in the borrowing unit. For example, a farmer may justify a loan for the purpose of buying a cow, and may, with the loan, buy a new animal as specified in loan documents. It is possible, however, that the farmer would have purchased the cow, without the loan, with his or her own funds. In this case, the net effect of the loan is not the purchase of an additional cow, but rather the new activity undertaken by the borrower with the owned funds substituted for by the loan. Clarifying the strengths and weakness of the data that are available and laying out additional information that must be collected from primary sources is a major step in RFM diagnosis.

#### Steps in Diagnosis

There are at least five steps that should be included in the diagnosis of any RFM. The weights placed on each of these steps and the sequence in which they are done are largely time and place specific, and depend heavily on local policy concerns. Including local technicians, researchers, and policy makers in developing the work plan for a RFM sector assessment is a critical part of the process. The assessment itself should include historical information on

(1) the structure and make up of the rural financial market and (2) details on public RFM objectives and RFM performance. A careful inventory of the (3) major policies that influence RFM activities is also a vital part of the diagnosis. This should include detailing how policy decisions are made and who makes these decisions. Background information on the overall financial market and money policies in the country must also be analyzed.

In those cases where (4) donor agencies and/or governments have directed a number of programs or projects through RFMs, these efforts should be detailed. Finally, it is important to (5) design the assessment so that policy makers are stimulated by the diagnostic process to make appropriate policy adjustments. Policy changes, not a final report, ought to be the end product of the RFM diagnosis. Major considerations in each of these steps are briefly outlined in the following discussion.

#### Market Structure

Most studies of RFMs collect a substantial amount of information on the make up of the formal market. This includes an inventory of the agencies that provide loans for agricultural purposes and the amounts of agricultural loans provided. Most central banks collect this information from the commercial banks and major government agricultural banks.

It is sometimes necessary to supplement this information with additional data on loans made by cooperatives, credit unions, crop development agencies, area development programs, agrarian reform agencies, and risk capital organizations. Where possible this information should be gathered for the past several decades and should include both year-end-balance (stock), and new loan (flow) figures in both nominal and real terms.

It is generally more difficult to get a clear idea about the make up of the informal rural financial markets. Large cross sectional studies aimed at documenting the extent and nature of informal markets can be costly. It is also common for these surveys to miss a good deal of lending that takes place between friends and relatives, and to fail to pin down short term loans that are mixed up with buying and selling of products. While it is useful to do limited surveys to establish a general idea about the relative importance of informal finance and to establish the range of arrangements made, it is much more important to clarify the economics of informal lending. What kinds of services do informal lenders provide to their clients? What are the costs of lending and the costs of borrowing in informal markets? What are the opportunity costs of the money lent by informal lenders? What is the degree of competition among informal lenders? What types of informal lending practices are useful for formal lenders to emulate?

In addition to collecting information on the volume of loans made by formal and informal lenders, information should also be collected on the various types of deposits handled by RFMs.

### Objectives and Performance

The usefulness of a RFM is measured by the degree to which its services help meet public policy objectives. It is important to recognize that firms and individuals providing financial services in rural areas are usually involved in multiple activities or produce several products. Under these circumstances, it should not be surprising that these firms and individuals can change the types and amounts of financial services offered relatively easily if they find it in their interest to do so.

The specific objectives that a government attempts to achieve through rural financial markets varies across countries and through time within countries. At least four common publically stated objectives, however, are pursued through most RFMs. These are (1) that financial markets should help the poor. (2) That the operations of financial markets should result in more efficient allocation of resources. (3) That RFM activities should boost government

efforts in other productive sectors. And, (4) that financial intermediaries should evolve into strong and self sufficient institutions.

Two groups of performance measures should be employed in the diagnosis. The first focuses on the performance of the entire RFM, while the other sheds light on the performance of individual intermediaries or credit programs. Historically, evaluations of RFM activities have stressed the latter at the expense of the former, but both types of information are necessary to establish cause and effect. The specific performance measures used must be those that shed light on the extent to which financial markets are helping to achieve public goals. For example, if an objective is to provide more financial services to the rural poor, performance measures must clarify the characteristics of those who borrow and save in financial markets and the extent of their benefits. Also if an objective is to expand the amount of agricultural lending, performance indicators must focus on measuring the nominal as well as real amounts lent for agricultural purposes, and also show what is happening to this type of lending in relative terms.

For data problem reasons pointed out earlier it is not generally clear who is receiving the major benefits of RFMs operations. Clearly, those who receive no loans and hold no financial savings deposits do not directly benefit from these services. It is also clear that those who are able to



get large loans at concessionary interest rates or who default on large loans benefit substantially from borrowing. A large part of what a financial market does is masked by the large number of small to medium sized loans and deposits that it handles. It takes a good deal of digging to clarify the economic characteristics of those who use these services and the amounts of benefits they receive.

The benefits from use of loans fall into three categories: normal gains from use of leverage through borrowing, income transfers that result from negative real rates of interest on loans, and the benefits that go to those who default on their loans and take the money as a once-and-for-all transfer of income. The amount of benefit realized from loan leverage is very difficult to document across a large number of borrowers. It, like the other two types of benefits, nevertheless, is proportional to the amount of money borrowed. The more money borrowed the more benefits. Because of the possibilities of one borrower holding multiple loans, loan size distribution information will give only a lower bound on the loan concentration question. Some borrower interviewing must be done to document the extent of multiple loans and to clarify who is defaulting on loans. Some aggregate measures of the amount of income transferred to borrowers through default and negative real rates of interest, along with the "tax" placed on financial savers through negative real rates of interest, can be useful performance measures.

It is impossible to directly measure the extent to which RFMs are helping to allocate resources more efficiently. The bits and pieces of economic gains made from efficient financial intermediation are virtually impossible to empirically aggregate. Several indirect measures, however, can be used to give a general idea of efficiency performance. The first measure is of how well financial activities are integrated in rural areas. This is best measured by the borrowing costs from various elements of the RFM. If there are substantial variations in these borrowing costs for similar quality loan services, this indicates that RFMs are fragmented and that loans are being rationed among borrowers and some are being excluded.

Detailed information on the total costs of financial intermediation, including both borrower and lender portions of these costs shed a good deal of light on fragmentation questions. How lenders absorb or allocate their loan transaction costs can also show the extent to which these transaction costs are used by the lender to ration credit under interest rate controls. Information on the types of innovations adopted by financial intermediaries can also provide insights on these issues. How does an innovation affect the lender's costs, the borrower's costs, and the quality of the service provided by the lender? Is the innovator largely motivated by desires to reduce the costs of financial intermediation, or is it largely an attempt by the intermediary

to evade the intent of regulation? Does the innovation reduce the total costs of financial intermediation shared by the borrower and the lender? Also, is the proportion of the total costs of financial intermediation incurred by the lender a sensitive measure of the degree of credit rationing through reallocation of loan transaction costs to the borrowers, and thus a proxy for the degree of fragmentation found in RFMs?

A number of direct measures can be used to indicate the degree to which RFMs respond to government priorities in terms of farm enterprises, term structures of loans and lending to priority sectors. Several measures can also be used to indicate the overall growth of the rural financial system. Several credit-to-output ratios, for example, can be used to show changes in the relative amounts of agricultural credit over time. Credit-to-credit ratios can be used to show changes in relative amounts lent to various sectors of the economy. Details on the term structure of loans made by the formal RFM can also be used to indicate the extent to which intermediaries are helping to reinforce government priorities in medium and long term investments.

If the government is trying to stimulate the production of a particular commodity, information can be assembled on the amounts of loans made for that purpose and how these amounts change over time. Some interviewing with bank employees will be necessary to see how many loans were redefined to meet policy objectives.

If a major government object is to control the growth of the money supply, the degree to which rural financial markets are self-financing would be an important performance measure. Also, measures of net flows of funds out of rural areas through financial markets also indicate the extent to which financial markets help achieve social objectives.

A small number of measures can be used to indicate the vitality of the financial intermediaries handling credit and deposit activities in rural areas. These measures include repayment records, the extent to which they are able to maintain and expand the real amount of funds they lend, institutional renaming and reorganization, extent of political interference, manager turn over, and the extent to which the system is self-financing and able to cover its own costs of operation.

#### Policies Affecting RFMs

RFMs are strongly affected by three sets of policies: (1) those directed at influencing money supply, the overall monetary system, and financial activities in general; (2) those directed at rural financial markets; and (3) those policies that affect the rates of return that producers in rural areas expect from their investments. It is especially useful to understand how these policies are made.

Gathering information on the first two types of policies is usually straight forward. Decrees by the monetary authority, the ministry of finance, or the central bank generally document the intent of these policies. These policies include changing the ownership of banks from private to government owned, various loan portfolio quotas, discount mechanisms, reserve requirements, interest rate controls, loan insurance schemes, building new intermediaries, and various reporting and accounting requirements. Some original work must generally be done on how financial intermediaries interpret and react to these policies, however.

Clarifying the extent to which various economic policies affect the returns to investments in rural areas is more difficult. These policies include those that influence the prices paid to rural producers, those policies that affect the prices rural producers pay for purchased inputs, and those policies that affect farm yields. Information on these rates of return are critical in RFM physical examinations because of several important and too often neglected issues: rates of return affect income and thus repayment capacities, expected income also strongly influences the amount individuals are willing to borrow with obvious implications for economies of scale in financial operations. And, rates of return along with incomes also strongly influence the amounts of money rural individuals have to deposit in financial markets.

In many low income countries few farm and non-farm businesses in rural areas expect to receive high and stable returns from their investments. In some cases this is due to unproductive resources and to harsh climates. In all too many cases, however, these low returns are due to policies that depress farm product prices, policies that raise the price of purchased inputs, and lack of public investment in things like irrigation facilities and agricultural research that sustain low yields. It is impossible to develop a healthy and expanding financial system if most rural producers serviced are not economically well.

Because of the heterogeneity that exists among producers in rural areas it is quite difficult to directly measure the rates of return that might be expected from the numerous activities carried out in rural areas. Normal proxies for these rates of return, loan demand and repayment rates, are often useless because of negative real rates of interest on loans and the intrusions of politics into loan repayment. Even with harsh price controls on agricultural products and low yield, there will always be a few rural producers who can realize relatively high returns on their marginal investments. A few of these producers can make profitable use of loan services, pay market rates of interest on their loans, and have an excellent chance of repaying their loans. In some cases governments may give certain segments of the agricultural sector special

treatment that results in relatively high returns to producers in that sector, while many other parts of the agricultural system have poor investment possibilities.

In most cases unfavorable price policies in the agricultural sector and the lack of government investment therein stem from policy consideration. Cheap and abundant credit is often the policy response to attempt to offset the adverse effects on income distribution and resource allocation of these broader policy measures. As discussed elsewhere, cheap credit fails on both efficiency and equity grounds (Adams and others eds.). Low interest rates force lenders to concentrate cheap loans in the hands of relatively few people, and low interest rates do not make unprofitable investment profitable.

A number of measures can be used to give general insights into rates-of-return questions. If a couple of major products like sugar cane or rice are important in the rural economy, a few production function or budgeting studies of representative farms can give insights into potential returns from additional liquidity provided by loans. Other more general proxies like terms-of-trade between the agricultural and non-agricultural sectors, historical yield information, and price information on products and inputs are also useful to shed light on farm profit questions. The rates of return realized by informal lenders in rural areas might also be used to indicate the return that at least some borrowers realize from borrowed liquidity.

Donor Involvement

In some LICs donors have provided a very large part of the total funds lent through agricultural credit programs. In some cases donors have also been instrumental in helping to set up major agencies that made up important parts of the formal credit system. In other cases donors may have been heavily involved in the development or funding of only a portion of the rural financial market. In a few of the LICs donor assistance has made up only a small part of the overall build up in the agricultural credit system. Where the World Bank, the regional development banks, or bilateral aid agencies are significantly involved, it is necessary to understand that involvement as part of the physical examination of RFMs.

It is typical for donor agencies to divide territory in LICs into areas of interest. Understandably, donors like to establish long term working relationships with agencies and fund a series of projects through these agencies. A representative country arrangement would be for the World Bank to move its funds into the central bank for rediscounting to other elements of the banking system for agricultural loans, for a bilateral aid agency like the Agency for International Development to provide funds for a supervised credit program for farmers, and for one of the regional development banks, like the Inter-American Development Bank



to provide a number of loans and technical assistance to an agricultural bank. In some cases the behavior of a financial intermediary is strongly shaped and influenced by its financial patron. In a few cases aid technicians may have a very strong influence on the operation of the intermediary. In virtually all cases the donor-supported credit program will be heavily flavored by the orthodoxy that prevails in the donor agency.

It is necessary to also establish the extent to which donor agencies are involved in setting policies in rural financial markets. One should also look at the extent to which donor involvement reorients the financial system away from traditional sources of liquidity for loan funds and also warps their information gathering process. At the same time, evaluations and loan documents that are associated with donor assistance can often provide valuable information about activities in RFMs.

#### Involving Policy Makers

Many of the problems found in RFMs are the result of incorrect policies. Improving the performance of these markets, as a result, is mainly a problem of getting appropriate policies adopted. A well done, written diagnosis of RFMs is far from sufficient, in most cases, to get some of these very controversial, yet critical policies

changed. It generally takes a good deal of convincing of a relatively large number of policy makers, technicians, and politicians before these policies are seriously considered for adjustment. A very important part of the RFM physical examination is getting key decision makers in the LIC involved in the diagnostic process. This includes representatives of the involved donor agencies.

Because the main result of the diagnosis must be policy changes and not just a written report, extending the results of the diagnosis should be a vital part of the process. Local researchers, local technicians and mid-level policy makers must feel involved in the diagnostic process and agree with the conclusion reached. Periodic workshops, seminars and conferences with policy makers during the diagnosis to keep them up-to-date and involved are very important. Doing this well is likely to be more of an art than a science. This kind of massaging of policy makers takes tact and time. In some cases the analysis must be adjusted along the way to meet special concerns that surface among policy makers.

In some cases it is useful to strengthen the capacity of local people to do analytic work on RFMs as part of the diagnosis. Ideally, this should include helping to develop a small research group in one of the local institutions, like the central bank, that can continue to do evaluations of the RFM after the initial examination of the RFM is completed.

Concluding Observations

I am increasingly convinced that most of the needed knowledge is at hand to allow "finance doctors" to substantially improve the performance of rural financial markets in many of the low income countries, and that it is possible to make quantum jumps in the performance of these markets similar to those made in production of rice and wheat through the miracle varieties of the mid-1960s. But, to do this it will be necessary to substantially improve the physical examinations that are given to rural financial markets, and to do a much more systematic job of using these analyses to influence policy makers to adopt more appropriate treatments. Because of the very diffused nature of financial markets, especially in rural areas, it is easy to be overwhelmed by data requirements and complexities in doing a diagnosis of these markets. It is very important that the right kind of questions be asked, that efficient amounts of data be collected to answer these questions, and that systematic and comprehensive procedures be used in the physical examination.

In the past three decades a large part of the analysis done on problems of agricultural credit and rural savings has focused on the demand for credit, rural savings capacities, and farmer behavior. The diagnostic steps I suggest

in this essay place much more emphasis on the supply of financial services, on the behavior of financial intermediaries, and on helping policy makers to identify better treatments for the ills that bedevil rural financial markets in so many of the low income countries.

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